

**HORIZONTALLY STRUCTURED MANUFACTURING PROCESS
MODELING FOR CONCURRENT PRODUCT AND PROCESS DESIGN**

ABSTRACT OF THE DISCLOSURE

Disclosed is a method of horizontally structured CAD/CAM manufacturing for concurrent product and process design, comprising: selecting a blank for machining into an actual part establishing a coordinate system; creating a master product and process concurrent model comprising: a virtual

5 blank corresponding to the blank; a manufacturing feature; virtual machining of the manufacturing feature into the virtual blank; the manufacturing feature exhibiting an associative relationship with the coordinate system; generating a product drawing of the actual part; and generating machining instructions to create the actual part by machining the manufacturing feature into the blank.

10 Also disclosed is a manufactured part created by a method of horizontally structured CAD/CAM manufacturing for concurrent product and process design, comprising: a blank for machining into an actual part a coordinate system; a master product and process concurrent model comprising: a virtual blank corresponding to the blank; a manufacturing feature; virtual machining of

15 the manufacturing feature into the virtual blank; the manufacturing feature exhibiting an associative relationship with the coordinate system; a product drawing of the actual part; and the actual part created by machining the manufacturing feature into the blank in accordance with a machining instruction. Also disclosed is a storage medium encoded with a machine-readable computer program code for horizontally structured CAD/CAM

20 manufacturing for concurrent product and process design. The storage medium including instructions for causing a computer to implement the method of horizontally structured CAD/CAM modeling and manufacturing. Additionally disclosed is a computer data signal for horizontally structured CAD/CAM

25 manufacturing for concurrent product and process design. The computer data signal comprising code configured to cause a processor to implement a method of horizontally structured CAD/CAM modeling and manufacturing.

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